IN THE SPECIFICATION

Applicants present replacement paragraphs below indicating the changes with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Please replace the paragraph beginning at page 8, line 31 with the amended paragraph as follows:

FIG. 85 is a cross-sectional view taken along section line [[3-3]] 85-85 in FIG. 84 illustrating one embodiment of a locking mechanism in the closed position;

Please replace the paragraph beginning at page 12, line 30 with the amended paragraph as follows:

The ferrule attachment tool 228 is positioned downstream from the fiber-prep module 202 so as to receive a tray 222 loaded with a pre-processed fiber 214 that is ready for receiving a ferrule on one or both ends of the fiber. In one illustrative embodiment described in more detail below, the ferrule attachment tool 228 automatically deploys a ferrule [[224]] from a supply of ferrules, positions the ferrule [[224]] in a predetermined location for mounting to the fiber, and mounts the ferrule onto the prepared fiber end. The ferrule attachment tool may also deposit an adhesive into the ferrule (if the ferrule has not been preloaded with an adhesive), and heat the adhesive to at least set the attachment of the ferrule and the fiber end. If necessary, the tool may also reorient the ferrule so that its appropriate end is presented to the fiber.

Please replace the paragraph beginning at page 19, line 6 with the amended paragraph as follows:

As illustrated, the walking beam 1008 may be coupled to a lift drive 1014, which is configured to raise and lower the walking beam relative to the outer frame, and a linear drive 1016 which is configured to the walking beam in a linear direction along the length of the frame. The lift drive 1014 may include a carriage 1018 that is configured to move in a linear direction relative to the transporter frame. The carriage 1018 is coupled to the walking beam with a pair of links 1020 which are pivotally connected to the carriage and walking beam. A lift actuator 1022 is coupled

between the carriage and at least one link 1020. The linear drive 1016 includes a drive mechanism 1024 that is coupled to the walking beam with a vertical slide [[2026]] 1026 to allow the walking beam to be raised and lowered in a fixed linear position.

Please replace the paragraph beginning at page 19, line 22 with the amended paragraph as follows:

With the walking beam in its raised position, the linear drive 1016 is actuated to move the walking beam 1008 in a linear direction as shown in FIG. 6(c). In this regard, the linear drive, via the vertical ~~coupling~~ slide 1026, moves the walking beam 1008 and the carriage 1018 a predetermined distance to position the tray 222 at the next process station. As illustrated, the vertical coupling 1026 may be moved using a ball/screw arrangement that is capable of precisely locating the tray at its desirable position.

Please replace the paragraph beginning at page 19, line 28 with the amended paragraph as follows:

Once the tray is properly positioned, the lift drive 1014 is actuated to lower the walking beam 1008 below the outer support rails 1004 so that the tray 222 is set in position on the outer rails. As illustrated, retracting the lift actuator 1022 causes the carriage 1018 to move relative to the walking beam due to the restraint of the vertical ~~coupler~~ slide 1026 resulting in lowering of the walking beam. Once lowered, the linear drive 1016 is actuated to reposition the walking beam in its home position as shown in FIG. 6(a) in preparation for the next transport cycle.

Please replace the paragraph beginning at page 32, line 10 with the amended paragraph as follows:

The machine 2100 includes a threading gripper 2113 (see FIGS. 11-12) that performs the function of the threading gripper 2013 of FIG. 12, as well as a winder 2117 that includes a mandrel 2119 and winding gripper 2115 that perform the functions of the components of the winder 2017 discussed in connection with FIG. 10. In addition, the machine 2100 includes a stripper that includes a cylindrical sleeve 2129 and an inserter 2131 that includes handlers ~~1231h~~ 2131h that perform the functions of the stripper and inserter components discussed above in connection with

the schematic illustration of FIG. 10. Furthermore, the machine includes a tray lifting apparatus 2125 to present a tray 2123 to the stripper 2131 to receive a coiled section of optical fiber 2107, in much the same manner as the schematic components discussed above in connection with FIG. 10. The machine 2100 includes a base or frame 2150 that supports each of the other components.

Please replace the paragraph beginning at page 41, line 23 with the amended paragraph as follows:

In accordance with one illustrative embodiment of the spooling tool, the following timing sequence is followed. As a preliminary step, a length of fiber sufficient to reach from the spool [[1]] 2001, through the tension dance arm assembly 2009 and idler 2011, to the threading gripper 2013, is manually fed out from the spool 2001. The end of the fiber is held in the threading gripper 2013 in such a way that a length of the fiber (e.g., less than one inch), protrudes from the threading gripper 2013. Once the threading gripper 2013 is actuated to secure the free end of the fiber, the operation of the machine to create a fiber coil and insert it into a tray 2023 takes 26.65 seconds when coiling the maximum three meter coil length. Of course, the invention is not limited in this respect, as various modifications can be made to the machine that will impact this timing.

Please replace the paragraph beginning at page 47, line 28 with the amended paragraph as follows:

To accommodate fibers of various diameters between the heaters, it may be desirable to resiliently mount the heater body 3068 relative to a mounting bracket 3074 for the heater. In one illustrative embodiment, the heater body 3068 is coupled to the mounting bracket 3074 with a resilient member 3076, such as a ~~leap~~ leaf spring, that allows the heater body to flex relative to the mounting bracket. In this regard, the strip arms 3032 may be configured to ensure that the heaters engage each other to ensure contact between the heaters and any fiber place therebetween. Depending upon the size of a particular fiber presented between the heaters, the leaf spring 3076 allows each heater body 3068 to flex relative to its mounting bracket 3074 to accommodate a fiber placed therebetween. It is to be appreciated that any biasing arrangement, if even desired, may be employed to accommodate fibers of varying diameters.

Please replace the paragraph beginning at page 48, line 26 with the amended paragraph as follows:

The blade holder 3080 may be coupled to a drive actuator 3092 via a vertical adjustment coupler 3094 extending through a vertical slot 3096 in the gripper back plate. In one illustrative embodiment, the lower portion of the blade holder is attached to the coupler 3094 such that movement of the coupler in the vertical direction along the slot similarly moves the blade holder 3080 in the vertical direction to either raise or lower the blades. A pair of guide pins 3098 may be provided to cooperate with a vertical guide slot 3100 in the blade holder to guide the blade holder in the vertical direction as it is raised and lowered by the drive mechanism. The coupler is attached to the actuator 3092 via a pivot mount ~~3012~~ 3102 such that operation of the actuator raises and lowers the coupler and blade holder.

Please replace the paragraph beginning at page 53, line 17 with the amended paragraph as follows:

According to one illustrative embodiment of the cleaning device 208, the tank assembly 4030 may be moved toward and away from the clamping assembly 4022 as illustrated by double arrow 4321. According to another aspect of the cleaning device 208, the clamping assembly may be moved as illustrated by double arrow 4041 to accommodate gripping the optical fiber at the outer coating 4014 after the fiber to coating transition 4015 (see FIGS. 36a and 36b).

Please replace the paragraph beginning at page 53, line 27 with the amended paragraph as follows:

As will be discussed in greater detail infra, according to one aspect of the tank assembly, the aperture is provided with a sufficient diameter so that any tolerance in the end of the fiber from the clamping axis [[16]] 4016 of the clamping assembly is accommodated by the aperture, such that the end of the fiber threads the aperture into the tank assembly. A further aspect of the clamping assembly is that the clamping assembly can be provided with a sealing mechanism [[22]] 4022 (see FIG. 38) that is constructed and arranged to mate with the aperture 4032 of the tank assembly 4030 and to provide a fluid seal of the aperture of the tank assembly. For example, the sealing mechanism of the clamping assembly may be biased against and into the aperture of the tank

assembly to seal the aperture, and also is constructed and arranged to provide a fluid seal around the optical fiber.

Please replace the paragraph beginning at page 54, line 24 with the amended paragraph as follows:

As will be discussed in further detail infra. ~~According~~ , according to another aspect of the illustrative embodiment of the cleaning device 208, the cleaning device comprises a controller [[80]] 4080 that controls, for example, any of the clamping assembly 4020, servo or actuator assemblies to move the clamping assembly and the tank assembly along respective axis 4041, 4321, the pump 4050 and an ultrasonic generator 4038. According to this illustrative embodiment of the cleaning assembly, once the fluid level sensor 4314 senses that the tank has been filled with the cleaning fluid to the desired level, the pump 4050 can be deactivated by the controller. In addition, the ultrasonic generator 4038 can be activated to emit ultrasonic waves within the fluid of the tank assembly. As will be discussed in further detail infra, the ultrasonic generator can be activated for a selected period of time to clean the end of the fiber submerged within the cleaning fluid of the tank 4034. After such time, the ultrasonic generator can be deactivated by the controller. Further, the pump assembly can be activated by the controller to pump the fluid in the tank 4034 to the fluid reservoir assembly 4060.

Please replace the paragraph beginning at page 56, line 13 with the amended paragraph as follows:

One embodiment of the clamping assembly, illustrated in FIG. 38, is described below and in co-pending U.S. entitled Centralizing Clamp for an Optical Fiber, filed on the same date herewith. The clamping assembly may be provided with a sealing mechanism 4022 that seals around the diameter of the optical fiber and that mates with the aperture 4032 and a sealing gland 4304 (see FIG. 39) of the tank 4034 of the tank assembly 4030. With this arrangement, the sealing mechanism 4022 will seal the aperture 4032 through which the fiber extends into the tank [[34]] 4034 with the sealing mechanism 4022 of the clamping assembly. The sealing mechanism may comprise opposing sealing members 4252, 4254. The sealing members and clamping assembly 4020 may be used to clamp the fiber in a position with an end 4018 of the optical fiber 4012

protruding from the sealing members 4252, 2454 so that the end 4018 of the fiber can be threaded through the aperture 4032 of the tank 4034 of the tank assembly 4030. It is to be appreciated that the sealing members may be attached to the clamping arms 4202, 4204 by any attachment means such as a bolt, screw, rivets, epoxy, and the like. The sealing members are configured to be compressed around the outer coating 4014 of the optical fiber in the closed position. The sealing members are also configured to form a plug that is inserted into the aperture 4032 of the tank 4034. In the illustrated embodiment, the plug has a frusto-conical shape that corresponds to the aperture 4032 and sealing gland 4304 of the tank 4034. It is to be appreciated that the plug can be formed from a compliant, solvent resistant material, such as a polyurethane material having a hardness of 55 Shore. It is also to be appreciated that the seal may be formed from any suitable material for preventing leaking of a solvent or other fluid. It may also have any suitable shape that is compatible with a corresponding aperture 4032 in the tank 4034. For example, the sealing mechanism may comprise sealing members having many shapes, such as the illustrated frusto-conical or cork-shaped sealing member (see exploded view in FIG. 40a). An alternative sealing mechanism may comprise sealing members 4257, 4259 and may be described as a super imposed bulls-eye shape, as illustrated in FIG. 40b.

Please replace the paragraph beginning at page 61, line 28 with the amended paragraph as follows:

Referring to FIG. 42, there is illustrated a perspective view of an embodiment of the fluid reservoir assembly 4060 of the cleaning apparatus 208. According to this embodiment, the fluid reservoir assembly includes a reservoir tank 4062, a cap assembly 4064, and a gasket 4066 that may be disposed between a top of the reservoir tank 4062 and the cap assembly 4064. The fluid reservoir assembly holds the cleaning fluid and may be coupled to pump 4050, which is illustrated with an exploded view of a portion of frame assembly 4070 in FIG. 43. According to the illustrated embodiment of the fluid reservoir assembly 4060, the cap assembly 4064 comprises a dip tube assembly 4090 including a dip tube [[92]] 4092 which extends into the reservoir tank 4062. The dip tube assembly comprises check valve 4054 in series between the dip tube assembly and a fluid line 4094 that is coupled to the pump 4050. This check valve 4054 is arranged to allow cleaning fluid to be drawn by the pump 4050 from the reservoir tank 4062 to the pump and to be pumped to the tank

assembly 4030. In addition, the check valve 4054 prevents fluid from being pumped by the pump 4050 to the fluid reservoir assembly through the dip tube assembly. The illustrated embodiment of the cap assembly 4064 is also provided with a second check valve 4056 in series with a filter ~~4096~~ 4058. The second check 4056 valve allows fluid to be pumped by the pump 4050 from the tank assembly 4030 to the fluid reservoir assembly 4060. With this arrangement, the fluid can be pumped to the fluid reservoir assembly 4060 by the pump 4050 and filtered by the filter ~~4096~~ 4058 to filter out any debris or residual buffer material that may be in the cleaning fluid.

Please replace the paragraph beginning at page 62, line 15 with the amended paragraph as follows:

According to the illustrated embodiment each of the check valves 4054, 4056 may be coupled by a respective fluid line coupled to the pump 4050 of FIG. 43. The pump 4050 may comprise a first port 4098 and a second port (not illustrated). The respective fluid lines may be coupled to the first and second ports. As has been discussed herein, the pump 4050 can pump fluid from the fluid reservoir assembly 4060 to the tank assembly 4030 via the dip tube assembly including dip tube 4092, the check valve 4054 and the fluid line (not illustrated). In addition, the pump 4050 can pump the fluid from the tank assembly 30 to the fluid reservoir assembly 4060 via a fluid line (not illustrated), check valve 4056 and the filter ~~4096~~ 4058. The check valves 4054, 4056 to ensure that the fluid only moves in one direction through the corresponding fluid line. It is to be understood that in the illustrated embodiment, the cleaning fluid is filtered when it is pumped to the fluid reservoir assembly. However, it is to be appreciated that modifications of this embodiment may be readily apparent to those of skill in the art and are intended to be within the scope of this disclosure. For example, the filter can alternatively be placed in a series between dip tube assembly 4090 and check valve 4054 to filter the cleaning fluid as it is pumped from the fluid reservoir assembly to the tank assembly 4030. Moreover, more than one pump may be used to pump the fluid in both directions between the fluid reservoir assembly and the tank assembly, one pump to pump the cleaning fluid from the fluid reservoir assembly to the tank assembly and a second pump to pump the fluid from the tank assembly to the fluid reservoir assembly. It is further to be appreciated that with more than one pump, the check valves may not be provided.

Please replace the paragraph beginning at page 63, line 23 with the amended paragraph as follows:

Referring to FIG. 43, there is also illustrated an exploded view of a portion of the frame assembly 4070 of the cleaning apparatus 208. According to the illustrated embodiment, the pump 4050 may be housed at this part of the frame assembly. In addition, vacuum assembly 4072 may also be disposed in this portion of the frame assembly and coupled to aperture 4312 in sealing gland 4304 through vacuum port 4318, (see FIG. 37) and to vacuum sensor 4320. This arrangement of the vacuum assembly 4072 and the vacuum sensor 4320 monitors the vacuum pressure in the vacuum assembly to determine whether there is a fluid seal between the clamping assembly 4022 and the tank assembly 4030, as discussed herein, and to suction any fluid leaking or remaining at the clamping assembly to tank assembly interface. Further, the illustrated embodiment of the frame assembly may comprise the sensors ~~4244, 4248~~ that monitor the position of the clamping arms 4202, 4204 of the clamping assembly 4020, as discussed herein. It is to be appreciated that various modifications to the frame assembly and to the cleaning assembly may be readily apparent to those of skill in the art and are intended to be within the scope of the disclosure. For example, any of the pump 4050, the vacuum assembly 4072, the vacuum sensor 4320 and the position sensors ~~4244, 4248~~ may not be disposed within this part of the frame assembly.

Please replace the paragraph beginning at page 70, line 14 with the amended paragraph as follows:

A supply for feeding a stack of ferrules to the collet is shown in FIG. [[56-57]] 55. A magazine 6048 supported by a magazine mount block 6101 is mounted by a bracket 6104 to the ferrule attachment apparatus. The magazine exit opens directly above a slide pusher 6105 (see FIG. 56). When the slide pusher 6105 is retracted along the X-axis, a ferrule is gravity fed into the slot 6106. The slide pusher 6105 is moved forward, loading the ferrule into a chuck, such as the illustrated cylindrical vacuum chuck 6051. The slide pusher 6105 then retracts to load another ferrule. A vision system 6049 (see FIG. 50), includes a camera, or other imaging device, linked to a computer, so that an image of the ferrule 6034 taken by the camera can be examined, to determine if the ferrule is in the desired orientation. The vision system may check the location of the ferrule opening and/or may determine what type of opening is being presented to the collet 6042. Other

methods of determining the orientation of the ferrule 6034 also are contemplated. For example, a probe may be used to physically detect the location of the ferrule opening or the type of ferrule opening. If it is desirable to reverse the orientation of the ferrule, the chuck 6051 may be rotated 180 degrees, switching the ferrule end which is presented to the collet 6042. A pneumatic actuator 6109 may rotate the chuck 6051 with a timing belt 6110. After acceptance of the orientation of the ferrule, a pusher tool such as, for example, a pin 6053 may be actuated to present the ferrule to the collet. The slide pusher 6105 and pin 6053 may be actuated with dual rod cylinders, belt systems, electric motors, or any other suitable actuators. Pneumatic dual rod cylinders 6112 are shown in FIG. 56.

Please replace the paragraph beginning at page 74, line 3 with the amended paragraph as follows:

A frame ~~6080~~ 6090 supports the ferrule attachment module ~~6228~~ 228, and additionally may house various electronics, pneumatic controls and connections, and a dedicated controller if desired as well as other displays, input devices and so on as illustrated in FIG. 54. The automated ferrule attachment station may be arranged to respond to signals from a computer controller; the controller being arranged to receive and transmit signals from and to various components, to control the various operations of the ferrule attachment station. The computer controller may be arranged to communicate with the various station components by direct hard link, wireless, and other arrangements as would be apparent to one of skill in the art. The computer controller may receive a signal that a particular step has begun or ended and the controller may, responsive to such a signal, generate a new signal initiating one or more operations of various of the devices incorporated into the station. The controller can be implemented in any of numerous ways, as the ferrule attachment tool is not limited to any particular technique. In accordance with one illustrative embodiment of the ferrule attachment tool, the controller is a processor that is programmed (via software) to perform the above-recited control functions, and to coordinate interaction amongst the various system components. Of course, it should be appreciated that other implementations are possible, including the use of a hardware controller, and/or multiple controllers that replace a single central controller. As an example, and without limiting the ferrule attachment tool, the controller may include a Windows NT based PC, and a distributed I/O system using a field bus such as CANOpen.

Please replace the paragraph beginning at page 90, line 16 with the amended paragraph as follows:

In one illustrative embodiment, shown in FIGS. 79-81, a centralizing clamp 8500 includes a seal formed by a pair of opposing seal members 8502 supported adjacent a pair of clamp jaws ~~5804~~ 8504. The seal members 8502 are configured to be compressed about the fiber in the closed position. The seal members are also configured to form a plug that may be inserted into the fiber entry port of a cleaning tool.

IN THE DRAWINGS

The attached sheets of formal drawings include changes to Figures 6d, 10, 11, 15, 16a, 23, 29, 30, 36a, 36b, 37, 41, 42, 46, 48, 49, 51-55, 57-59, 62, 63, 66b, 67a, 67c, 67d, 68, 69, 72, 77, 79, 80, 82-84, and 86-88 as set forth below. These sheets, which include Figures 1-89, replace the original sheets including Figures 1-89.

In Figure 6d, reference characters "1020" and "1024" have been added.

In Figure 10, reference character "3" has been changed to "226", and the label "Tension Dance Arm Assembly" has been added next to reference character "2009".

In Figure 11, reference character "2109a" has been deleted.

In Figure 15, reference characters "2119s", "2131" and "2205" have been added.

In Figure 16a, cross-sectional line D-D has been deleted, and reference characters "2115", "2131", "2205", "2209", and "2211" have been added.

In Figure 23, reference character "2303" has been added.

In Figure 29, reference character "3088" has been added.

In Figure 30, reference character "3090" has been added.

In Figures 36a and 36b, the views have been rotated to match the Figure 35 orientation.

In Figure 37, the orientation of the components corresponding to reference characters "4020", "4030", "4040", and "4322" has been altered to show alignment.

In Figure 41, reference character "4340" has been deleted.

In Figure 42, reference character "4096" has been changed to "4058".

In Figure 46, reference character "5052" has been added.

In Figure 48, reference characters "6035" and "6037" have been deleted.

In Figure 49, reference character "6039" has been deleted.

In Figure 51, reference characters "6079", "6121", and "6220" have been added.

In Figure 52, reference characters "6121" and "6220" have been added.

In Figure 53, reference characters "6076" and "6132" have been deleted, and reference characters "6047", "6063", "6121", and "6220" have been added.

In Figure 54, reference characters "6080" and "6089" have been deleted, and reference characters "222", "6071", "6072", "6079", "6121", and "6220" have been added.

In Figure 55, reference characters "6102" and "6103" have been deleted.

In Figure 57, reference character "6113" has been added.

In Figure 58, reference character "6073" has been changed to "6138", and reference character "6132" has been added.

In Figure 59, reference character "6121" has been added.

In Figure 62, reference character "6211" has been deleted.

In Figure 63, reference character "6223" has been deleted.

In Figure 66b, reference characters "222" and "7006" have been added.

In Figure 67a, reference character "7008" has been added.

In Figure 67c, reference character "7016" has been added.

In Figure 67d, reference character "7008" has been added.

In Figure 68, reference characters "7026" and "7028" have been added.

In Figure 69, reference character "7026" has been added.

In Figure 72, reference characters "8020" and "8114" have been added.

In Figure 77, reference character "8104" has been added.

In Figure 79, reference characters "8114" and "8133" have been added.

In Figure 80, reference character "504" has been changed to "8504", reference character "502" has been changed to "8502", and reference character "116" has been changed to "8116".

In Figure 82, the orientation of the components has been altered to illustrate movement in a radial direction.

In Figure 83, reference character "47" has been changed to "9047", and reference characters "9018", "9022", "9042", "9043" have been added.

In Figure 84, reference characters "9064" and "9062" have been switched, and reference characters "9018", "9022", "9040", "9041", and "9042" have been added.

In Figure 86, reference characters "9018", "9022", and "9024" have been added.

In Figure 87, reference character "9032" has been changed to "9034" and reference character "9026" has been added.

In Figure 88, reference characters "222" and "9024" have been added.